

Louisiana Environmental Results Program for
Oil and Gas Exploration and Production

Final Report
September 25, 2012

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Multimedia Oil and Gas Production Environmental Results Program Project

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Acknowledgements

This project required involvement of representatives from USEPA, DEQ, DNR, industry, and the public (through Environmental Non-Government Organizations). Stakeholders and their respective contributions are described below:

- **USEPA** - the Environmental Results Program was housed within the USEPA and provided the grant award, program oversight and guidance to the Louisiana Environmental Results Program Oil and Gas Project.
- **LDNR/OC** - the Louisiana Department of Natural Resources/Office of Conservation provided direct access to data tables associated with the regulatory functions their agency applies to the oil and gas Exploration and Production (E&P) industry. This access was used to coordinate agency information in web-based applications for stream-lining of LDEQ air and water permitting process.
- **Industry representatives** - a number of groups that represent oil and gas industry interests participated in discussions on the development and implementation of this project. It was absolutely essential for the E&P industry, who is the intended user of compliance assistance tools developed within the scope of this project, to guide the development of these tools and assist in customizing the associated approaches. The compliance assistance tools developed for this project are intended to be used by this group of stakeholders.
- **Public (ENGOS)** - environmental advocacy is a driving force in environmental protection. Having the benefit of independent third party involvement assisted in ensuring that goals of this environmental results program are reached. In addition, ENGOS can help recognize the applicability for future use of these tools in other media, other programs at the DEQ, and other regulatory agency uses.

Introduction

The Louisiana Department of Environmental Quality (LDEQ) sought funding from the USEPA to assist implementation of an innovative project to promote increased compliance rates within the E&P industry and streamline air and water permitting activities for both industry and the LDEQ. Goals of the Louisiana Environmental Results Program (ERP) included demonstrating baseline compliance rates within air and water regulatory programs, applying innovative and transferable compliance assistance approaches, including a web-based permit application module and development of a print-quality compliance assistance document “Field Guide to Environmental Compliance for the Louisiana Oil and Gas Exploration and Production Industry” (“Field Guide”), and measuring and reporting on industry compliance rates after implementation of compliance assistance approaches. The deliverables of this project stand to strengthen USEPA partnerships with other states by making available descriptive compliance assistance approaches with demonstrated effectiveness, by addressing environmental management of a unique business sector whose site specific activities can change rapidly, and by integrating compliance assurance and compliance assistance activities for efficient agency and industry operations.

Method

This project identified a target universe (E&P industry) and measured that universe in a statistically significant manner (rate of compliance). Treatment was applied (in the form of compliance assistance measures) and the target universe was measured again subsequent to the treatment. The difference in compliance rates is attributed in large part to the treatment.

Selection of the Targeted Universe - The universe of well site operators in Louisiana varied from approximately 1200 to 1300 annually based on review of the LDNR/OC SONRIS oil and gas well database. The targeted number of well sites selected from the LDNR/OC well site database for baseline Full Compliance Evaluation (FCE) was 300 (representing 300 operators) for an approximate sample size of 23 to 25%. However, upon facility selection it was noted that approximately 285 facilities met all criteria below, therefore providing a sample size of nearly 100% for that portion of the industry sector.

Well sites were selected based on the following criteria:

- 1) The well operating company was operating more than one E&P site in Louisiana so that baseline FCEs and post treatment FCEs can be conducted at different facilities operated by the same company. This allows compliance changes to be largely attributable to compliance assistance as opposed to potential enforcement ramifications.
- 2) The well operating companies selected represented the operators with highest monetary value of production to maximize the probability of a chosen facility to be

subject to permitting and to help ensure the company operates more than one regulated facility in Louisiana.

3) Sites belonging to selected operating companies are distributed across the state in a manner that would spread inspection resource allocations evenly across the six LDEQ regions of the state to maximize the number of site visits without excessive impact on inspection resources.

The bias that this approach provides slanted facility selection toward those operators who are most likely to afford to be in compliance and/or have resources to conduct activities in a compliant manner. This minimizes the effect of economics on the operational decisions made by facility operators. This also gives opportunity to fully develop and "fine tune" compliance assistance approaches so that small-profit operators will be provided with a proven set of compliance assistance tools.

Trained LDEQ Inspection staff conducted FCEs as described in applicable LDEQ Standard Operating Procedures (SOPs) at selected facilities within Louisiana to gain a measure of current compliance rates within the industry for air and water programs. Inspectors conducting FCEs were instructed to go to a listed well site and locate the associated E&P site for compliance evaluation. Guidance, orientation, and oversight were provided to inspection personnel to ensure consistent, thorough and accurate facility site reviews. Inspection information entered into TEMPO was quality controlled by the project manager.

Treatment in the form of Compliance Assistance Tools - Interactions with industry and the public resulted in the development of tools expressed as being useful for compliance assistance. The tools included regional workshops to discuss ERP activities and expectations, participation in developing, publishing, and distributing a compliance assistance document "Field Guide to Environmental Compliance for the Louisiana Oil and Gas Exploration and Production Industry", and web-based modules for permit application as to their environmental requirements.

Compliance assistance tools developed within the scope of this project included the following:

- Regional Workshops - workshops were held in the creation and in the final distribution phases of the web-based permit application modules and in "Field Guide" development. Workshops provided opportunity for the public (through ENGOS) and industry to give guidance and comment, to review draft materials for acceptability, and to give approval for final work products. A web site for information transfer was used to support this activity.
- "Field Guide to Environmental Compliance for the Louisiana Oil and Gas Industry" - this document puts into laypersons language how to identify air and water program requirements that are applicable to a given E&P facility. It also describes how to use the on-line permit application modules. It is intended to be easily read and portable, to be used in the field or office as needed. The document also discusses practices that industry representatives can employ that will go beyond compliance and provide added protections for the environment. These practices include efforts that reduce waste and prevent pollution. These "Best Practices" are considered Environmental Business

Practice Indicators within the scope of the ERP program and can be distributed to other agencies and programs.

- Web-based permit application modules - the internet may now be used to complete an on-line form to submit application for LDEQ air and water permits. Enabling on-line permit applications removes a "temporal" obstacle to environmental compliance for industry by providing a more timely method of submitting and updating permit applications.

Post-treatment compliance rate evaluations – FCEs were conducted at facilities owned by companies subject to the baseline FCEs, but at different facilities other than those inspected as part of baseline. This was intended to identify changes to compliance rates attributable to corporate level compliance awareness as opposed to those attributable to facility-specific enforcement actions. Information from these inspections were compared to baseline compliance rate data and used to report quantified changes to compliance rates. Due to depletions of producing formations and changes in operatorship due to acquisitions, only 185 of the 285 round one operators met the criteria of operating at least one additional E&P site which was not inspected during the first round of inspections. Hurricane Isaac prevented the completion of all scheduled inspections. However, 156 air inspections and 164 water inspections were completed prior to this report date (see **Results**).

Results

Over the course of the inspections to determine pre-treatment compliance rates, acquisitions and closures of E&P sites resulted in a further reduction in available sites for inspection. As a result, 279 E&P sites were inspected to determine pre-treatment compliance with air quality regulations and 280 E&P sites were inspected to determine pre-treatment compliance with water quality regulations.

The results of the pre-treatment and post-treatment compliance evaluation inspections are summarized in Table 1 and Table 2 below.

Table 1. Compliance with Air Quality Regulations: Pre- and Post Treatment

AIR	Round 1 Inspections	Round 2 Inspections
E& P Site Inspections	279	156
In Compliance	162	117
Percent in Compliance	58.1 %	75.0%
Compliance Rate Increase		+ 16.9%
Permitted Facilities	153	91
Un-Permitted Facilities	126	65
Percent Un-Permitted	45.2%	41.7%
AOC = No Air Permit	52	12
Permit Compliance Rate	58.7%	81.5%
Compliance Rate Increase		+ 22.8%

The 156 E&P sites which were inspected to determine compliance with air quality regulations post treatment represent 84.3% of the universe of operator and E&P site criteria. Compliance with air quality regulations improved 16.9% post treatment.

Post treatment there was a marked reduction in the number E&P sites that did not have an air permit but, due to emission rates, were required to have an air permit. This resulted in a 22.8% improvement in compliance with air permitting requirements.

Table 2. Compliance with Water Quality Regulations: Pre- and Post Treatment

WATER	Round 1 Inspections	Round 2 Inspections
E& P Site Inspections	280	164
In Compliance	138	100
Percent in Compliance	49.3 %	61.0%
Compliance Rate Increase		+ 11.7%
Permitted Facilities	64	31
Un-Permitted Facilities	216	133
Percent Un-Permitted	77.1%	81.1%
AOC = No Air Permit	28	4
Permit Compliance Rate	87.0%	97.0%
Compliance Rate Increase		+ 10.0%

The 164 E&P sites which were inspected to determine compliance with water quality regulations post treatment represents 88.6% of the universe of operator and E&P site criteria. Compliance with water quality regulations improved 11.7% post treatment.

Post treatment there was a reduction in the number E&P were required to have an LPDES permit but did not have an effective LPDES permit. This resulted in a 10.0% improvement in compliance with LPDES permit requirements.

Conclusions

Increased industry compliance rates after application of the compliance assistance tools developed within the ERP indicate that the approach was successful. However, it cannot be determined with certainty whether any one tool was more significant than another in achieving program goals. It is probable that no one tool alone can be credited, but rather the entire program of outreach, face-to-face workshops, the “Field Guide” development process, and web-based air and water permit applications is responsible.

This approach can be transferred conceptually for application in other regulatory programs, other industry sectors, and other state’s environmental agencies. With agreement that permitted facilities are less impacting on the environment, the Louisiana Environmental Results Program has demonstrated positive environmental outcome as a result of this effort.

ATTACHMENT

“Field Guide to Environmental Compliance for the Louisiana Oil and Gas Exploration and Production Industry”, April 2012. Louisiana Department of Environmental Quality, Baton Rouge, LA.